Listing of Claims

1. (Currently amended) A connector for mechanically connecting hollow structures, in particular small vessels, comprising:

an annular member of deformable material, said annular member having a center line and a main plane, and being ~~adapted to be permanently deformed~~permanently deformable by expansion from a first size in a starting position in which ~~it~~the connector is delivered to a desired anastomosis site, to a second, larger size in a joining position in which ~~it~~the connector connects the hollow structures,

~~circumferentially spaced means~~ joining elements circumferentially spaced about said annular member for joining abutting walls of the hollow structures together, said ~~means including~~joining elements comprising staple-like elements ~~being adapted to be~~which are permanently ~~deformed~~ deformable from a starting position in which the connector is delivered to a desired anastomosis site, to a joining position in which ~~they~~said staple-like elements engage the hollow structures to thereby cause the connector to connect ~~them~~the hollow structures, each said staple-like element~~s having at least two free ends and~~ being attached to the annular member, ~~between its free ends~~ and comprising at least two staple portions extending from said location of said attachment between each said staple-like element and said annular member to free ends of each said staple portion, at least part of each said staple portion being tapered in a direction corresponding to a direction from the location of attachment between each said staple-like element and said annular member towards ~~their~~the free end~~s~~ of said staple portion.

2. (Currently amended) The connector as claimed in claim 1, wherein each said staple portion tapers to at least a lesser~~the~~ radial thickness ~~of the staple-like elements is diminished towards the respective free ends~~.

3. (Original) The connector as claimed in claim 1, wherein a center line of each of the staple-like elements is disposed substantially within a radial plane of the annular member.

4. (Original) The connector as claimed in claim 2, wherein the staple-like elements are substantially straight in their starting position.

5. (Currently amended) The connector as claimed in claim 3, wherein the staple portions of the staple-like elements have extreme tips which, in the starting position, are ~~preformed into the~~ curved to approximate an anticipated curve of said tips resulting from ~~the~~ deformation of said staple-like elements from the starting position to the joining position.

6. (Original) The connector as claimed in claim 1, wherein the connector is made from one piece of material.

7. (Currently amended) The connector as claimed in claim 1, wherein ~~parts~~ the staple portions of at least some of the staple-like elements are configured differently on opposite sides of the~~ir~~ point of attachment between the staple-like elements and~~to~~ the annular member ~~are configured differently~~.

8. (Currently amended) The connector as claimed in claim 1, wherein the annular member is made ~~up~~ from a continuous, elongate~~d~~ piece of material having a sinusoidal pattern meandering about a circumferential line through the main plane of the annular member.

9. (Currently amended) The connector as claimed in claim 8, wherein ~~the~~each said staple-like elements ~~are~~is located ~~formed~~ at an apex of the sinusoidal pattern.

10. (Currently amended) The connector as claimed in claim 1, wherein the main plane of said annular member is at an angle to the center line of the annular member different from 90^0.

11-35. (canceled)

36. (Currently amended) A connector for mechanically connecting hollow structures, in particular small vessels, comprising:

an annular member of deformable material, said annular member having a center line and a main plane, and being ~~adapted to be~~ permanently ~~deformed~~deformable by expansion from a first size in a starting position in which ~~it~~ the connector is delivered to a desired anastomosis site, to a second, larger size in a joining position in which ~~it~~said connector connects the hollow structures,

~~circumferentially spaced means~~joining elements circumferentially spaced about said annular member for joining abutting walls of the hollow structures together, said ~~means~~joining elements including staple-like elements ~~being adapted to be~~which are permanently ~~deformed~~deformable from a starting position in which the connector is delivered to a desired anastomosis site, to a joining position in which ~~they~~said staple-like elements engage the hollow structures to thereby cause the connector to connect ~~them~~the hollow structures, and

wherein the main plane ~~through~~of the annular member and the center line ~~thereof~~of the annular member are at an angle relative to ~~each other~~one another.

37. (Currently amended) A connector for mechanically connecting hollow structures,

in particular small vessels, comprising:

an annular or tubular member of deformable material, said member being adapted to be permanently deformed from a first size in a starting position in which ~~it~~ the connector is delivered to a desired site, to a second, larger size in a joining position in which ~~it~~the connector connects the hollow structures,

~~circumferentially spaced means~~joining elements circumferentially spaced about said annular or tubular member for joining abutting walls of the hollow structures together, said ~~means~~joining elements including staple-like elements ~~being adapted to be~~which are permanently ~~deformed~~deformable from a starting position in which the connector is delivered to a desired site, to a joining position in which ~~they~~said staple-like elements engage the hollow structures to thereby cause the connector to connect ~~them~~the hollow structures, each said staple-like elements being attached to the annular member ~~near their~~proximate to a center of said staple-like element and extending in a direction substantially parallel to the center line of the annular member.

38-39. (Canceled)

40. (New) The connector as claimed in claim 1, wherein said tapering of at least one said staple portion provides predetermined bending characteristics to said at least one staple portion.

41. (New) The connector as claimed in claim 40, wherein said tapering of said at least one staple portion causes said at least one staple portion to permanently deform to a C-shape in said joining position.

42. (New) The connector as claimed in claim 40, wherein said tapering of said at least one staple portion causes said at least one staple portion to permanently deform to a C-shape forming a circle in said joining position.

43. (New) The connector as claimed in claim 40, wherein said tapering of said at least one staple portion causes said at least one staple portion to permanently deform to a C-shape forming overlapping circles in said joining position.

44. (New) The connector as claimed in claim 40, wherein said tapering of said at least one staple portion causes said at least one staple portion to permanently deform to a B-shape in said joining position.

45. (New) The connector as claimed in claim 40, wherein said tapering of said at least one staple portion causes said at least one staple portion to permanently deform to an overlapping B-shape in said joining position.

46. (New) The connector as claimed in claim 1, wherein the tapering of said staple portions is located on a radially outer side of said staple portions.

47. (New) The connector as claimed in claim 1, wherein the tapering of each said staple portion results in a reduction of a radial thickness of a part of said staple portion, relative to a radial thickness of another part of said staple portion.

48. (New) The connector as claimed in claim 1, wherein the tapering of each said staple portion results in a reduction of a circumferential width of a part of said staple portion, relative to a circumferential width of another part of said staple portion.

49. (New) The connector as claimed in claim 1, wherein the tapering of each said staple portion results in a reduction of both a radial thickness and a circumferential width of a part of said staple portion, relative to a radial thickness and a circumferential width, respectively, of another part of said staple portion.

50. (New) The connector as claimed in claim 6, wherein a laser in employed to make the connector.

51. (New) The connector as claimed in claim 6, wherein electric erosion is employed to make the connector.

52. (New) The connector as claimed in claim 6, wherein the connector is fabricated by first making a two-dimensional shape from the single material, and then forcing the two-dimensional shape into a desired three-dimensional shape.

53. (New) The connector as claimed in claim 52, wherein the two-dimensional shape is made by photo-etching.

54. (New) The connector as claimed in claim 52, wherein the two-dimensional shape is made by electroplating.

55. New) The connector as claimed in claim 6, wherein the connector is fabricated by first making a two-dimensional shape from the single material, and then bending and welding portions of the two-dimensional shape to create a desired three-dimensional shape.

56. (New) The connector as claimed in claim 55, wherein the two-dimensional shape is made by photo-etching.

57. (New) The connector as claimed in claim 55, wherein the two-dimensional shape is made by electroplating.

58. (New) A connector for mechanically connecting hollow structures, in particular small vessels, comprising:

an annular member of deformable material, said annular member having a center line and a main plane, and being permanently deformable by expansion from a first size in a starting position in which the connector is delivered to a desired anastomosis site, to a second, larger size in a joining position in which the connector connects the hollow structures,

joining elements circumferentially spaced about said annular member for joining abutting walls of the hollow structures together, said joining elements comprising staple-like elements which are permanently deformable from a starting position in which the connector is delivered to a desired anastomosis site, to a joining position in which said staple-like elements engage the hollow structures to thereby cause the connector to connect the hollow structures, each said staple-like element being attached to the annular member, and comprising at least two staple portions extending from said location of said attachment between each said staple-like element and said annular member to free ends of each said staple portion, at least a tip of each said staple portion, is curved in the starting position to approximate an anticipated curve of said tips resulting from deformation of said staple-like elements from the starting position to the joining position.

59. (New) The connector as claimed in claim 58, wherein the connector is made from one piece of material.

60. (New) The connector as claimed in claim 58, wherein the staple portions of at least some of the staple-like elements are configured differently on opposite sides of the point of attachment between the staple-like elements and the annular member.

61. (New) The connector as claimed in claim 58, wherein the annular member is made from a continuous, elongate piece of material having a sinusoidal pattern meandering about a circumferential line through the main plane of the annular member.

62. (New) The connector as claimed in claim 61, wherein each said staple-like element is located at an apex of the sinusoidal pattern.

63. (New) The connector as claimed in claim 58, wherein at least part of each said staple portion being tapered in a direction corresponding to a direction from the location of attachment between each said staple-like element and said annular member towards the free end of said staple portion.

64. (New) The connector as claimed in claim 63, wherein said tapering of at least one said staple portion provides predetermined bending characteristics to said at least one staple portion.